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A Al-Ameen

ON THE VALUE OF COUNTERFACTUAL ASSESSMENTS IN MERGER CASES

Summary

The cost of erroneous decisions in merger cases could be huge. However, authorities cannot eradicate potential errors due to the ex-ante nature of merger control. Nevertheless, to minimise errors, stakeholders have formulated predictive techniques to aid assessments. One of the key means of engineering these techniques is through the use of counterfactuals. The problem, though, is that the status and value of such counterfactual assessments are far from clear. The lack of clarity has thus occasionally raised doubts about the nature, value, scope, and limitations of counterfactual assessments. The results may sound 'scientific', yet they are not. On the flip side, the process may appear overly elaborate, yet the result may be the best logical answer available. In light of the foregoing and in order to address all the different implications for mergers, this paper explores the value of the counterfactual in providing relative accuracy. It gives a holistic account of the role of the counterfactual right from the point of market definition up until the stage of ex-post-evaluation. Specifically, it explains the role of the counterfactual in ascertaining the substitutability of products through the use of the hypothetical monopolist test. Further, it details the importance of the counterfactual in the assessment of market power. The paper thereafter assesses the importance of ascertaining the right basis for the counterfactual. This is followed by the summary of the importance and consequence of the counterfactual assessment. The article also addresses the importance of the counterfactuals in efficiency analysis, failing firm defence and remedies.

A Al-Ameen, Lecturer, School of Law and Politics, Cardiff University.

1. Introduction

A competition authority engages in merger control particularly to review the prospective or actual impact of a merger on the state of competition in the market. The idea behind merger control is not only about pre-emptively preventing a merged entity from abusing its dominant position in the future, but also about maintaining a beneficial market structure. Merger control laws are often guided by well-developed economic theories and empirical analyses. The resulting merger decisions are, therefore, of such high sensitivity that there is hardly any margin for error. Thus, in respect of actual merger assessments, it is imperative that competition authorities are able to find a justifiable basis for their decisions to either allow, refuse or amend merger plans. To be able to do this, they are required to forecast the possibility of abuse by assessing whether the merged entity would have an incentive to abuse its position in the post-merger state of the world. This is where the counterfactual comes in as a comparator to the actual state of things in the pre-merger world.

The use of counterfactual analysis in merger control usually involves isolating and assessing the effect of specific transaction by comparing the market outcome resulting from the merger with the situation that would have prevailed in the absence of the merger.[1] The counterfactual is thus important in revealing whether the merger would lead to the substantial lessening of competition afterwards.[2]

However, the value of counterfactual assessment cannot be taken for granted, despite the scepticism of some philosophers who consider counterfactuals to be nothing more than legal fiction, which, by its nature, amounts to a mere communicative device that signals the futility of further justification to a non-legal audience.[3] Contrary to this perception, competition law counterfactual could not possibly be a mere legal fiction – or could it? If we accept that "fictions created in the application of law are not assertions that pretend to express an empirical truth"[4] and at the same time consider counterfactual assessments to be fictional exercises, might we thus be tacitly approving that such assessments are devoid of empirical substance? Perhaps counterfactuals are the economists' extension of fact to the unknown world, and its "empirical" strength is nothing more than a possibility[5] or an accurate review of a foregone branch of a decision tree?[6]

Beyond the philosophical imbroglio, the value and practicality of counterfactual assessment is still up for debate, as some regimes (especially developing countries) might all-together dispense with counterfactual assessment because of the difficulty of obtaining relevant data for empirical analysis.[7] Similarly, even more advanced regimes often find it difficult to ascertain the correct counterfactual.[8] As such, they are sometimes unsure of the actual mode, manner, and scope of counterfactual assessment.[9] Moreover, restating and re-

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1 Neils *et al.* 2011:338.
2 Neils *et al.* 2011:338.
3 Del Mar 2013:485-505.
4 Gama 2015:362.
5 Davies 2012:769-805; Lewis 1974.
6 Elster 1978.
7 Aydin & Büthe 2015.
8 Claici *et al.* 2016:186.
9 The recent decision in cases T-208/13, *Portugal Telecom SGPS, SA v European Commission*, and T-216/13, *Telefónica, SA v European Commission*, underscores the lack of certainty on the best way to approach counterfactual assessments, as well as Joined Cases C-83/01, C-93/01 and C-94/01, *Chronopost SA, La Poste and French Republic v Union française de l'express (Ufex), DHL International, Federal express international (France) SNC and CRIE SA*, 2003 E.C.R. I-7018.

affirming the value of the counterfactual is also important, because it impacts on the duration[10] and cost of competition disputes. Further, a particular merger approach adopted may be criticised for being under-[11] or over-inclusive. Yet these advanced regimes tend to require counterfactual analysis.[12]

Despite the varying issues and concerns that have been raised concerning the nature and viability of counterfactual assessments in competition cases, it must be recognised that they could, in principle, give a plausible explanation of the unknown. They provide workable models that bridge the gaps in reasoning. They are, therefore, worthy of objective analyses. This paper would thus present a modest descriptive analysis of the value of counterfactual assessments in merger cases. To contextualise the analysis, focus will be on European merger control.

2. Merger control counterfactuals

Factors that shape the counterfactual include a combination of reasoned economic theories, law, logic, and the prevailing circumstance at the time of the merger. For example, to build the counterfactual, competition authorities may consider whether a firm is about to enter or exit the market or whether existing competitors have made plans to expand their businesses. They could also consider whether there are likely to be changes in the regulatory system. Above all, the counterfactual seeks to forecast the effect of the merger so that competition authorities can make the most appropriate decision.

The European Commission succinctly explains the use of the counterfactual in its Notice on Horizontal Merger:

> In assessing the competitive effects of a merger, the Commission compares the competitive conditions that would result from the notified merger with the conditions that would have prevailed without the merger. In most cases, the competitive conditions existing at the time of the merger constitute the relevant comparison for evaluating the effects of a merger. However, in some circumstances, the Commission may take into account future changes to the market that can reasonably be predicted. It may, in particular, take account of the likely entry or exit of firms if the merger did not take place when considering what constitutes the relevant comparison.[13]

The role and importance of the counterfactual cannot be overstated, as it spans through all the activities in merger control. In particular, the role of counterfactual in ascertaining the relevant market for merger analysis is worthy of mention. For example, in *Ryanair/Aer Lingus III*, the European Commission demonstrated the role of counterfactual, while ascertaining whether the presence of one merging party in a given route has an effect on the fares charged by the other merging party. It also identified the value of counterfactual in quantifying the magnitude of the effect on fare charges. Further, the Commission demonstrated how counterfactual assessments help in predicting whether prices would increase on average if the proposed merger were to proceed.[14]

Counterfactual analysis is also relevant in assessing the presence or potential of market power;[15] it is important for the substantive assessment and interpretation of the present and future conducts of firms. It is also relevant for the assessment of efficiency

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10 Yang 2016:69-97.

11 Veljanovski 2013:171-201.

12 See, for example, *Deere* v. *Commission* C-7/95 P, EU:C:1998:256, par. 76; Prek & Lefèvre 2016:65-90.

13 Notice on Horizontal Merger:par. 9.

14 *Ryanair/Aer Lingus* COMP/M.4439.

15 See, for example, Veljanovski 2013.

claims/defence as well as the assessment of failing firm defence and remedies. These important roles of the counterfactual are explained in turn.

2.1 Market definition and the counterfactual

The concept of market can be defined as a group of similar goods or services in a particular location.[16] Market definition is not merely an academic exercise, and its relevance to the activities of merger control cannot be overstated. Accurate market definition is a prerequisite for making correct merger decisions, since the degree of competition in a market crucially depends on how the boundaries of the market (in product and geographical terms) determine the presence and extent of competitive constraints.[17] To put it differently, market definition is important, because the concept of dominance is central to the working of merger control.[18] When competition authorities seek to assess the presence or absence of market power, they most often assess the market share of the firms. In order to be able to accurately ascertain the market share, they must identify the relevant product or geographical market. The counterfactual helps in reaching an accurate delineation of the market by comparing the demand and supply forces in the actual market and then forecasting on the basis of some assumed facts.

In merger and dominance cases, the commonly used counterfactual is the hypothetical monopolist. This counterfactual will be thoroughly addressed, but before engaging in the analysis, I will briefly explain the types of market and the role of substitutability.

2.1.1 Types of markets and the role of substitutability

The relevance of market definition has been iterated in dominance cases such as *United Brands*[19] and *Continental Can.*[20] Markets can be defined in terms of the nature of products or the geographical location. A product market can be defined as comprising all those products and/or services that are regarded as interchangeable or substitutable by the consumer, by reason of the products' characteristics, price, and intended use.[21] Evidence used in defining product market include data of substitution in the recent past, a number of quantitative tests, views of consumers and competitors, consumer preferences, barriers and costs associated with switching demand, potential substitutes, different categories of customers, and price discrimination.[22]

The geographic market is the area in which the undertakings concerned are involved in the supply and demand of product and services, in which the conditions of competition are sufficiently homogeneous, and which can be distinguished from neighbouring areas, because the conditions of competition are appreciably different in those areas.[23] The evidence that has shaped the definition of the geographic market includes past evidence of diversion of orders to other areas, basic demand characteristics, views of customers/competitors, current

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16 Office of Fair Trading, *Guidelines for Competition Assessment*, *a guide for policy makers completing Regulatory Impact Assessments*, February 2002:par. 5.8.

17 Kokkoris 2005a:207.

18 Whish 2015:872.

19 *United Brands Continental BV v Commission* [1978] ECR 207.

20 *Continental Can v Commission* 6/72, 1973 ECR 215.

21 Jones & Sufrin 2014:64.

22 Office of Fair Trading, Market Definition:paras 3.6-3.8. Relevant Market. Commission notice on the definition of the relevant market for the purposes of community competition law. Official Journal C 372, 09.12.1997.

23 Office of Fair Trading, Market Definition Guidelines:par. 7.

geographic pattern of purchase, trade-flow pattern of shipments as well as barriers and switching cost of diverting orders to companies located in other areas.[24]

The European Court of Justice has explained that market definition is essentially a matter of substitutability.[25] Such analysis can be done by assessing the demand-side substitutability and/or the supply-side substitutability. In the context of mergers, demand-side substitutability aims at identifying and including in the defined market only those substitutes whose prices and other characteristics constrain the ability of the merging firms and their rivals from raising prices or reducing output.[26] Further, there is supply-side substitutability where a producer can switch production to the relevant product in a short time period without incurring significant additional cost or risks, and so on.[27]

In general, the concept of substitutability helps in setting the appropriate basis through which we can identify the true impact of a merger. Substitutability is measured by the cross-price elasticity of demand, and the estimate can be produced by using the hypothetical monopolist test otherwise known as the Small but Significant Non-Transitory Increase in Price (SSNIP). Its importance in building the counterfactual will be addressed below.

2.1.2 Importance of the hypothetical monopolist as the counterfactual

The concept of the hypothetical monopolist is built on an assumed world where there is a small permanent increase in the price of particular goods. If such increase in price leads to an increase in purchase of other goods that renders such increase unprofitable, then those two goods will be said to belong to the same market.[28]

The counterfactual, in this instance, simply shows the possible consequence of an alternative fact. Relying on the present state of affairs, it projects the behavioural pattern of other market participants such as consumers where a firm increases its price (small, but significant increase). The counterfactual thus serves as a prerequisite for an accurate merger analysis; if we get the counterfactual for market definition wrong, our analysis will be erroneously built on either an overly broad market or a too narrow market, which could result in type I or type II errors. Type I error occurs in the context of merger control where a pro-competitive merger is erroneously blocked or altered. Contrarily, a type II error occurs where a merger with potential anti-competitive effect is approved.[29]

An essential element in building up the counterfactual is the critical loss analysis.[30] It has been said that the critical loss analysis makes the SSNIP operational,[31] as it estimates how much the hypothetical monopolist's sales would have to fall in order to make the hypothetical price increase unprofitable.[32]

However, the counterfactual derived through the SSNIP is not always watertight, as it might lead us to commit the cellophane fallacy.[33] This is because, under the SSNIP, the "starting price" for building the counterfactual may have been determined in the absence of competition and hence may be above the competitive level. The fallacy in the assessment

24 Office of Fair Trading Market Definition Guidelines:par. 15.
25 *United Brands Continental BV v Commission* [1978] ECR 207. See also Kokkoris 2005a:209.
26 Office of Fair Trading, Market Definition:par. 15.
27 Office of Fair Trading, Market Definition.
28 Niels *et al.* 2011:38.
29 Duso *et al.* 2006:24.
30 Harris & Simons 1989:211; Katz & Shapiro 2003.
31 Kokkoris 2005a:518.
32 Kokkoris 2005a:518.
33 From *United State v E.I DuPont de Nemours & Co* 351 U.S. 377 (1956).

results from the fact that even a firm with considerable market power and which charges a higher price than it would charge in a competitive market will usually face competition at this high level from firms with substitute products. Thus, because we are likely to broaden the relevant market to include goods and services that can compete with the firm under review, we are prone to the cellophane fallacy as we might define the market too widely.[34] This may lead to an understatement of the actual competitive effect of the transaction.[35]

Perhaps the importance of the SSNIP counterfactual analysis is not really lost, as it has been argued that the problem of the cellophane fallacy is more prominent in abuse of dominance cases and that the SSNIP test is applied more efficiently in merger cases. This is because the European Commission takes the prevailing price as the starting point, thereby mitigates the risk.[36] In effect, the relevant market for merger inquiries will be at least as wide as the ones appropriate for dominance enquiries.[37] Merger cases are, however, not totally insulated from the cellophane fallacy problem. For instance, it has been shown that the problem could arise where pre-merger price is higher than the competitive level, but the likely post-merger price is significantly closer to the competitive level.[38]

The importance of the counterfactual derived through the SSNIP is further weakened by the argument that there are instances where the mark –up (*i.e.*, 5 percent increase) may not accurately reflect the scope of the market.[39] In addition, it has been shown that, while the hypothesised price increase is treated as fact, the hypothesised diversion to other products is treated as speculation.[40] Other issues that undermine the relevance of SSNIP as the counterfactual for market definition relate to the volume of lost sale and the volume of sale.[41] The importance of the critical loss analysis in identifying the counterfactual has been faulted.[42] There are also those who doubt the importance of the hypothetical monopolist counterfactual.[43] Further, even where the counterfactual is considered to be of value, it has been contended that the strict adherence to the much-touted SSNIP is rarely possible.[44]

Conclusively, it is evident that the hypothetical monopolist counterfactual is crucial for the whole merger analysis. However, there are two possible arguments that tend to diminish its importance. The first is that the counterfactual could lead authorities to commit the cellophane fallacy, while the second is that it is perhaps possible to completely do without the analysis.

2.2 Market power and the counterfactual

Market power may be defined as the ability of a supplier of goods or services to raise price above the competitive level in a sustained and profitable manner.[45] The presence or absence of market power derives from our definition of the relevant market. A typical indicator of a firm's market power is its market share, which may be measured by assessing the sales

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34 This has been said to be most likely for abuse of dominance issues. Kokkoris 2005b:210.
35 Kokkoris 2005b:211.
36 Kokkoris 2005b:210.
37 Kokkoris 2005b.
38 Kokkoris 2005b:211.
39 Tom 2004:2.
40 Tom 2004:2.
41 Harkrider 2004:3.
42 Katz & Shapiro 2003:50.
43 See, for example, Blumenthal 2004.
44 Blumenthal 2004.
45 Furse 2007:33. Market share of 50 per cent or more is generally considered an indication of market share.

revenue, production volume, sales volume, capacity, or reserve.[46] In assessing the relative strength of firms involved in merger transactions, common tools used are concentration ratios and Herfindahl-Hirschman Index (HHI). External factors such as barriers to entry and countervailing buyer power are also taken into consideration in assessing market power. This whole exercise requires counterfactual assessments.

2.2.1 Tools and the counterfactual

As mentioned earlier, market share is determined with the use of tools such as concentration ratios and the HHI. Concentration ratios reflect, in the absolute terms, the aggregate market share of a number of the largest suppliers in the market in question, whereas the HHI requires a more robust analysis, as it considers the share of supply held by the larger firms. For the purpose of illustrating the counterfactual, focus will be placed on HHI as it is more commonly used by the top competition authorities.[47]

HHI is the sum of the squared market share of the companies on a relevant market. The HHI result determines whether there are competition concerns that require greater scrutiny. This is determined by assessing the HHI score against identified thresholds. If the score reaches such threshold, then the market share would raise competition concern, and vice versa. For instance, the EU Commission is not likely to consider an HHI of less than 1,000 as raising a competition concern.[48] According to the Office of Fair Trading (OFT), in a highly concentrated market, a merger with a delta[49] in excess of 50 may give rise to potential competition concern.[50] However, as in the Exxon/Mobile Merger case,[51] special circumstance might warrant the modification of the HHI. In that case, the HHI was adjusted accordingly to reflect the likely post-merger state whereby all competitors, but BP, would be motivated to align their interest with that of Exxon/Mobile and Shell.

From the foregoing, it is clear that in our assessment as to whether there is a potential competition concern arising from a merging firm's market power, we would need the post-merger market share counterfactual. However, while the market share analysis serves as a valuable first indication of market power,[52] it does not necessarily imply that there is market power. As stated earlier, other factors such as the issue of barrier to entry and countervailing buyer power can play a role. Specific reference to the latter will be made in light of the importance of the counterfactual.

2.2.2 Factors and the counterfactual

Where there are indications that the merging parties will have market power as a result of their merger, they could point to the existence of countervailing buyer power.[53] This requires that they build the counterfactual of the post-merger world where the buyers are strong enough to exercise a considerable influence that neutralises the enhanced market power of the merged entity. The argument will succeed, if the counterfactual (based on either the status quo or future events) leads us to project that the customer could credibly threaten to resort,

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46 UK Mergers: Substantive Assessment Guidelines 2003:par. 4.3.
47 Furse 2007:36.
48 Commission Notice, Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings [2004] OJ C 31/3:par. 20.
49 With "delta" being the change in the HHI achieved by subtracting the merger HHI from the post-merger HHI.
50 Substantive Assessment Guidelines 2003:par. 4.3.
51 Case IV/M.1383.
52 Notice on Horizontal Merger Guidelines:par. 14.
53 Kokkoris 2006a:139-164.

within a reasonable time frame, to alternative sources of supply, should the supplier decide to increase the price or otherwise deteriorate the quality or conditions of delivery.

The counterfactual is important for both the merging entity and the competition authority; for the merging entity, the counterfactual affords them the opportunity to show a different state of the post-merger world. For the competition authority, it ensures that they arrive at more accurate outcomes.

In conclusion, it can be said that the counterfactual developed through the HHI is more likely to be used as against the concentration ratio. The HHI counterfactual is important, because it moves the authority closer to the true picture of the post-merger world. It is, however, not a perfect tool.[54] In addition, the consideration of factors such as barriers to entry is controversial and might render the counterfactual too unsuitable.

2.3 Substantive analysis and the counterfactual

As stated in the preceding sections, the counterfactual provides a rigorous means of identifying the effects of the merger. It thus helps in establishing whether there is a causal link between the transaction and any loss of consumer welfare.[55] In order to establish how the counterfactual plays out in competition authorities' merger control assessment, this section is subdivided into two subsections. First, I detail the elements of and the factors that dictate the counterfactual. Secondly, I explain the sources of evidence upon which the counterfactual is built.

2.3.1 Nature of assessment

Pertinent issues arise when it comes to the assessment of the counterfactual; we have to decide the starting point of assessment, the method and the number of counterfactuals required, and so on. The mere recognition of the need for variation underscores the importance of the counterfactual in that it allows for a principled approach and leads to merger-specific results as against generalised formal requirements that might lead to type I or type II errors.

- The basis of counterfactual assessment: status quo

  The counterfactual could either be based on the status quo of the market and the emerging entities or on a future date. Typically, competition authorities will use the former as the basis of their counterfactual assessment. In other words, counterfactual analyses generally rely on the situations that prevail at the time when the merger is being reviewed.[56] For example, the General Court stated in *Airtour plc v Commission*[57] that "the level of competition obtaining in the relevant market at the time when the transaction is notified is a decisive factor in establishing whether a collective dominance has been established".[58] The task is thus to assess whether the pre-merger state of the market would have been likely to change in the absence of the merger.

  The 2010 UK Merger Guidelines[59] provides that "[i]n practice, the OFT generally adopts the prevailing conditions of competition (or the pre-merger situation

54 Markovits 2004:177-178.
55 Lindsay 2009:242.
56 Geradin & Girgenson 2011:3.
57 *Airtour plc v Commission* [2002] ECR II-2585.
58 *Airtour plc v Commission* [2002] ECR II-2585:par. 82.
59 UK Merger Guidelines 2010:par. 4.3.2.

in the case of completed mergers) as the counterfactual against which to assess the impact of the merger". For example, in assessing non-coordinated effects of horizontal mergers, the counterfactual would lead a competition authority to refuse or conditionally approve a merger if, after the analysis of the prevailing condition of competition, it is revealed that rival suppliers are unlikely to expand production in the short or medium term, because they face capacity constraint,[60] or if existing spare capacity is not cost effective.[61]

- The basis of counterfactual assessment: When two counterfactuals will be needed

Although the present state of affairs is the ideal starting point for counterfactual assessment, there are instances where it would be ideal to also consider a future date as the starting point of the counterfactual assessment. In such instance, the competition authority is likely to generate two counterfactuals: one based on the present situation of things, while the other is based on a future date.

Colley and Marsden have identified two instances that would typically require more than one counterfactual.[62] The first instance is where competition may be expected to deteriorate anyway in the absence of the merger. This relates to the issue of the failing firm, which will be addressed in greater detail later. The second instance is where competition could improve in the absence of the merger. For example, as shown in *BSkyB/ITV*, a different counterfactual might be important where a proposed merger may prevent a more competitive merger from happening. Furthermore, from the *Ticketmaster/Live Nation* case, it can be inferred that an alternative counterfactual might be required in assessing the potential impact of a new entrant.

Lindsay has identified two other instances where more than one counterfactual would be required. The first is where there are parallel mergers and the second, where there are overlapping mergers.

With regards to parallel mergers, it has been said that competition authorities would likely consider alternative counterfactual analyses when forming their decision. For example, (as was the case in *Nestle/Perrier*,[63] *Air Liquide/BOC*,[64] and *Sanitec/Sphinx,*[65]) where there are proposed mergers A and B and competition authority is assessing Merger A, it would have to take into account proposed merger B, since it has to predict the way in which the market would develop in the absence of merger A. While presenting the market share data in *Sanitec/Sphinx*, the European Commission noted that, if a separate merger proceeded, the parties to that transaction would have a substantial market share. In addition, the Commission would consider an alternative counterfactual where the second merger, which is likely to impact on the relevant market, falls outside the Commission's jurisdiction.[66]

Concerning overlapping mergers where more than one proposed merger involves the same supplier, an alternative counterfactual might be acceptable where one of the parties to the first proposed transaction is in the process of acquiring or disposing of another business in the same market through a second transaction. In this

[60] Notice on Horizontal Merger Guidelines:par. 34.
[61] Notice on Horizontal Merger Guidelines:par. 35.
[62] Colley & Marsden 2010.
[63] *Nestle/Perrier* IV/M.190 [1992] OJ L356/1.
[64] *Air Liquide/BOC* COMP/M.1630 [2004] OJ L92/1.
[65] *Sanitec/Sphinx* IV/M. 1578 [2000] OJ L294/1.
[66] Lindsay 2009:249.

instance, as argued in *Apollo/JP Morgan/PrimaCom*,[67] the competition authority could assess the counterfactual principle on the basis of the proposed acquisition and on the assumption that the acquirer would dispose of the other business.

In sum, the counterfactual could show the need for flexibility on the part of the competition authority. However, it should be noted that not all counterfactuals would be acceptable. For instance, a competition authority might be sceptical and may be more likely to refuse a counterfactual built around the merging firm's future plans.

2.3.2 Sources of evidence upon which the counterfactual is based

The method of generating evidence for counterfactual analysis also adds to its importance, as it leads the competition authority to critically assess the factors that could impact on the merger. The improvement as to the accuracy of the sources of evidence for the counterfactual analysis also adds quality to the overall merger control exercise. For example, the recognition of the overall importance of the counterfactual has influenced the development of increasingly sophisticated tools that help forecast the likely effects of mergers.[68] Two sources of evidence have been identified, namely empirical evidence and natural experiments.[69] By applying a counterfactual based on empirical evidence from customers and competitor, the competition authority may be able to reach a more accurate decision of the likely effect of a merger. This means that with regards to, for example, two-sided platforms, counterfactual assessments should take account of the whole range of conducts and effects on all sides.[70]

2.4 Importance and consequence of counterfactual assessment

In this section, I summarise, with examples, some of the implications of the different impacts of the counterfactuals identified earlier. It has been continuously stated that the counterfactual helps in assessing the possible changes in a market, in order to make an informed decision about a particular merger. In general, the counterfactual is derived by assessing the pre-merger state of the market – for instance, by assessing whether the market would have been likely to change in the absence of the merger. If a change would have occurred in the market in the absence of the merger, the counterfactual can be deployed to assess the way in which the market is predicted to operate. The counterfactual could also assess a future date.

With regards to assessment based on the pre-merger state of the world, the counterfactual could, for instance, be used to ascertain whether the merged group would have an incentive to reduce its output with the aim of raising the price.[71] For example, in *Total/Sasol/JV,* the Commission emphasised that rival suppliers of paraffin waxes and micro waves were capacity constrained in the present state of affairs that might serve as an incentive to the merged entity to engage in abusive practices. The alternative reasoning applies where it is clear that competitors have spare capacity and an incentive to expand output if prices rose.[72]

The flexibility and merger-specific approach, which the counterfactual brings to merger control, means that outcomes cannot be set in advance in a formal and abstract way. For instance, a merger may be prohibited, even if prices are likely to fall as a result of the

[67] *Apollo/JP Morgan/PrimaCom* COMP/M.3355.
[68] See, for example, RBB Economics 2004.
[69] Colley & Marsden 2010.
[70] Ducci 2016:591-622.
[71] Notice on Horizontal Merger Guidelines:par. 32.
[72] *UCB/Solutia* COMP/M.3060:par. 43.

transaction, if it can be shown that prices would have fallen further or faster in the absence of the transaction. This is because the counterfactual, against which the effects of the merger are judged, is one in which prices would have fallen further or faster. The idea that would be applied is that the merger harms consumers just as much as if prices had risen following the transaction.[73]

In addition, a merger may not be prohibited, if it reduces or does not aggravate a pre-existing competition issue. For example, in *Logista/Etinera/Terzia,*[74] it was considered that the sale of a monopoly distributor of tobacco from a large producer to a small producer reduced the incentive to discriminate against rivals upstream. A merger may also not be prohibited, if the acquiring party could achieve the same result through its own independent conduct. For instance, the Commission found in *YLE/TDF/Digital/JV*[75] that the merger would not itself necessarily lead to, or facilitate price increases.

Where a counterfactual draws on likely and imminent changes in the structure of competition, this also adds to the flexibility and merger-specificity of the competition authority's activities. For example, a merger, which would otherwise have been refused, may not be prohibited, even if conditions of competition decline following the transaction. This is likely where the counterfactual reveals that the condition of competition would have declined at least to the same extent if the transaction had not occurred.[76] The recognition of ordinary future conducts in building the counterfactual could also play a significant role in reaching the correct result. For example, in *TUI/CP Ships*,[77] the Commission considered the fact that a third party had served notice to terminate its membership of a shipping consortium and was, therefore, not considered as part of the consortium for the purpose of assessing the proposed merger.

Counterfactual assessment based on the present state of the market can show that intervention or prohibition of a merger is unnecessary, for example, where a merger does not materially increase the acquiring party's influence or control over the target, as was the case in *Rheinbraun Brennstoff/SSM Coal*,[78] or as in *Coca-Cola Enterprises/Amalgamated Beverages GB*,[79] where the merger did not have an effect of coordinating behaviour, because there was already a joint venture to coordinate their activities on the market.

Another possible consequence of the interpretation of the counterfactual is that it might show that the prohibition of a merger is unnecessary where such merger does not materially increase the degree of cooperation between the parties. What would thus have to be considered is the extent to which the cooperation would have been inhibited by regulation. In *Delta Air Lines/Northwest Airlines*,[80] the parties were members of the SkyTeam Alliance and cooperated extensively prior to the merger. They planned to enter into a closer cooperation, even in the absence of the merger, through a joint venture. The Commission identified the relevant counterfactual as a situation where the parties had limited incentive to compete due to their existing cooperation, reinforced by the planned joint venture. It thus

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[73] Lindsay 2009:244.

[74] *Logista/Etinera/Terzia* COMP/M.3553 (2004/C 278/05).

[75] *YLE/TDF/Digital/JV* COMP/M.2300:par. 40.

[76] See failing firm defence in section 4 below.

[77] *TUI/CP Ships* COMP/M. 3863; *Bayer/Aventis Crop Science* [2004] OJ L107/1. However, in *Air France/KLM* COMP/M.3280, the Commission considered an argument that a third party airline intended to join an alliance, but stated that its admittance to the alliance was not a fact and that "it would not be appropriate to take it into consideration" in merger investigation.

[78] *Rheinbraun Brennstoff/SSM Coal* COMP/M.2588.

[79] *Coca-Cola/Amalgamated Beverages GB* IV/M3273 [1997] OJL218/15 1029.

[80] *Delta Air Lines/Northwest Airlines* COMP/M.5181..

assessed only the competitive effect of the permanent structural link between the parties. In doing so, it took into account the fact that the existing cooperation was granted antitrust immunity in the USA in forming its decision on the likely future conduct of the group.

3. Counterfactual and efficiency gains

If, after thorough analysis, it becomes clear that a merger would weaken the competitive structure, it is possible that the merger could still be cleared where the merging entities can prove that the merger would result in efficiency gains. For instance, the European Commission, in the Horizontal Merger Guidelines, expressed its willingness to consider efficiency arguments and would accept a merger as compatible with the common market as a result of the efficiency generated where there is sufficient evidence that the efficiencies generated by the merger are likely to enhance the ability and incentive of the merged entity to act pro-competitively for the benefit of consumers, thereby counteracting the adverse effect on competition which the merged entity might otherwise have.[81]

Initially, the Commission did not accept efficiency defence, but it altered its position due to criticisms from both sides of the Atlantic particularly with regards to its decision in *GE/Honeywell*,[82] where it was accused of operating a doctrine of "efficiency offence".[83]

Just as the counterfactual is important in ascertaining the presence of anti-competitive effect, it is also vital in efficiency arguments. However, while it is for the competition authority to build the counterfactual for the purpose of assessing the impact of the merger, the burden of proving the efficiency gains rests on the merging entity. The counterfactual built by the merging entity must fulfil the condition, which is that the merger will only be allowed if efficiency gains sufficiently offset any disadvantages such that consumers will not be worse off due to the merger. This requires that the efficiency will have to be substantial and timely and "should, in principle, benefit consumers in those relevant markets where it is otherwise likely that competition concerns would occur".[84] For example, in its assessment of the prospective efficiency gains from the merger, the Commission, in *Aerospatiale-Alenia/de Havilland*,[85] was of the opinion that, although there appeared to be cost savings from the merger, it was not substantial in comparison to the scale of the merger. The Comission then found that any such savings were not likely to be passed on to consumers.

From the preceding paragraph, the importance of the counterfactual to the merging entity in discharging the burden of proof is clear – the counterfactual will reveal potential gains which flow to the consumer. It could also help in showing that such gains are substantial and timely. In addition to these, the counterfactual will reveal the kind of cost savings that could be generated from the merger. It is, however, important that the counterfactual reveals acceptable cost savings. For instance, a counterfactual that reveals cost savings due to anti-competitive reduction in outputs would be disregarded,[86] whereas a counterfactual that reveals cost efficiencies that lead to a reduction in variable or marginal costs is more likely to be relevant to the assessment of efficiencies.[87] Overall, with the right counterfactual analysis, a merging firm could manage to convince competition authorities

[81] Guidelines on the assessment of horizontal mergers [2004] OJ C 31/5:par. 79.
[82] *GE/Honeywell* COMP/M.2220.
[83] Luescher 2004:72.
[84] Horizontal Merger Guidelines:par. 79.
[85] *Aerospatiale-Alenia/de Havilland* COMP/M.53.
[86] Horizontal Merger Guidelines:par. 80.
[87] Horizontal Merger Guidelines.

that the efficiency gain from the merger outweighs its likely anti-competitive effect.[88] However, for the merger to succeed, the merging parties would have to show that the efficiency arises specifically from the merger, which would otherwise not be achieved,[89] and that the efficiencies claimed are verifiable.[90]

The importance of the counterfactual in proving that the efficiency gains are substantially transferred to consumers is worthy of note. As stated earlier, it is not enough for the merging entity to show that the merging is likely to generate efficiency benefits; hence, the need to show that it is passed on to the consumer. It has been considered a sound theory that a monopolist will reduce its price when marginal cost decreases and that this result does not depend on the level of competition faced by the merged firms. Thus, as long as the post-merger firm faces a downward sloping demand curve, profit maximisation implies that at least some of the marginal cost savings will be passed on in the form of lower prices.[91] It is for the merging entity to give practical bite to this theoretical construct through the counterfactual. Thus, the counterfactual is important, in this instance, to establish that, in the post-merger world, the demand curve will slope downward. It would also show the extent to which it will slope.

The counterfactual for assessing the pass-on has been said to be similar to the assessment for the pass-on of overcharge in the quantification of damages.[92] Generally, firms are assumed to maximise their profit, given a certain level of marginal costs and the degree and nature of competition they face. By comparing this assumed fact with the counterfactual benefit, which the merging entity is likely to get, a decision can be reached as to whether the benefit is, in fact, substantial. These results can then be used to infer what happens to price if costs change. Afterwards, the counterfactual will reveal the likelihood of pass-on by assessing the proportion of a cost savings as reflected in the final price. For instance, the proportion of pass-on can be ascertained by measuring the absolute change in price expressed as a percentage of the absolute change in the marginal cost.[93]

4. Failing firm defence

In instances where the counterfactual of a merger transaction reveals that, in the post-merger world, the structure of the market would be more restrictive and hence, likely to lead to consumer harm, the natural interpretation would be to refuse such merger. However, where one of the firms (usually the target firm) is ailing and is likely to fail in the absence of the merger, a fresh merger-specific concern arises, and this might require that the counterfactual be adjusted to reflect the likely failure of one of the parties and the resulting loss of rivalry.[94] In such instance, it might be better for the competition authority to allow the merger. Cases in which the failing firm defence has been invoked include *Lloyds/HBOS*, *NewsCorp/Telepiu,* and *Stagecoach/Preston.*

The overall importance of this adjusted counterfactual is that it could very well prevent the occurrence of a greater harm to competition than is predicted to result from one or more of the rejected mergers. To achieve an accurate prescription, the counterfactual in mergers involving a failing firm should not be based on the pre-merger competitive

88 Horizontal Merger Guidelines:par. 81.
89 Horizontal Merger Guideline:par. 85.
90 Horizontal Merger Guidelines:par. 86.
91 Niels *et al.* 2011:374.
92 Niels *et al.* 2011.
93 Komninos *et al.* 2009:par. 4.4; Friederiszick 2010:595-618.
94 Office of Fair Trading, Merger: Substantive Assessment Guidance:par. 34.

condition.[95] However, the fact that a firm is in difficulty and might not survive without the merger is not sufficient to conclude that the correct counterfactual is the market without the target firm. There is a need to consider what would have happened to the target and its assets in the absence of the merger. Thus, the key issue is not only that the target firm would exit, but also that its productive or specialised assets would exit with it.[96] Following the Court of Justice's lucid analysis in *France v Commission*, the Commission set out the requirement for the failing firm defence in the Horizontal Merger Guidelines:

> The Commission considers the following three criteria to be especially relevant for the application of a "failing firm defence". First, the allegedly failing firm would in the near future be forced out of the market because of financial difficulties if not taken over by another undertaking. Second, there is no less anti-competitive alternative purchase than the notified merger. Third, in the absence of a merger, the assets of the failing firm would inevitably exit the market.[97]

Based on the foregoing, the counterfactual would result from our inquiry into whether, in the absence of the merger, the target firm would really exit the market. It would also reveal whether another firm could buy up the asset of the target firm if it fails in the absence of the merger. Thirdly, it would reveal whether the acquired entity is merely ailing or truly failing.[98]

The cumulative interpretation of these queries gives rise to two conditions – the merger analysis will consider whether the exit of the target firm is inevitable in the near future and whether there is no realistic and substantially less anti-competitive alternative outcome than the proposed acquisition.[99] These conditions influenced the four criteria that were established in the case of *Kali und Salz/Mdk/Treuhand*.[100] The Commission would require the merging entities to show that, in the absence of the merger, the target firm will disappear from the market in the near future. Secondly, there is no likelihood that there is another firm whose merger or acquisition of the target firm will result in less damage to the competitive structure. Thirdly, from available evidence, it is clear that, if the target firm were to fail, virtually all of its market share would go to its merger partner or acquirer. Fourthly, it should be shown that the competitive structure resulting from the concentration would deteriorate in a similar fashion, even if the concentration did not proceed.

More refined criteria, however, emerged in *BASF/EUrodiol/Pantochim*:[101] the acquired undertaking would, in the near future, be forced out of the market if it is not taken over by another undertaking; there is no less anticompetitive alternative purchaser; the asset to be acquired would inevitably exit the market if not taken over by another undertaking, and the deterioration of the competitive structure through the merger is at least no worse than in the absence of the merger.

In sum, the importance of the counterfactual in the failing firm scenario is that it opens a route for the merging entity to convince the competition authority to allow a merger, even though it impacts negatively on the competitive structure. It is also important, because it affords the competition authority a reasoned basis to exercise their discretion in order to prevent a potentially worse outcome.

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95 Kokkoris 2006b:494.
96 Neil *et al.* 2011:341.
97 Horizontal Merger Guidelines:par. 90. See also UK Merger Guidelines 2010:paras 4.29-4.36.
98 Horizontal Merger Guidelines. In *Aeropatiale/Alenia/de Havilland*, for example, the failing firm defence was rejected, as it was not likely that Boeing would close down de Havilland if the merger failed.
99 *Saint Gobain/Wacker-Chemie/NOM* No IV/M.774, [1997] OJ L247/1.
100 *Kali und Salz/Mdk/Treuhand* [1994] OJ L186/38.
101 *BASF/EUrodiol/Pantochim* No COMP/M.2314.

However, the problem with failing firm counterfactuals is that they "are easily the subject of self-speculation – relatively easily alleged but difficult, given the informational asymmetries, to verify independently".[102] It is for this reason that it requires stringent test and is rarely granted. Thus, as stated above, it is required that the merging firms prove that, in the absence of a merger, the asset would *inevitably* exit the market. This high threshold, it is believed, would help keep out unguarded self-speculations in the building of the counterfactual. However, Bavasso and Lindsay do not agree with this burden of proof. They contend that the Commission could have used a different standard of proof by stating that the party needed to show that the assets would be *more likely than not* to exit from the market.[103] In addition, the high threshold for fulfilling the condition that customers should not be deprived of the benefits of competition from the target firm for a material time has been criticised on the account that the Commission takes a more relaxed approach and is willing to allow that consumers suffer in the longer term in normal efficiency assessments and that there is no principled basis for requiring different levels of harm to the consumers under failing firm defence. In other words, the counterfactual that indicates a longer period of existence and hence, maintains the competition in the market for such period should not necessarily be viewed as a ground for refusing the failing firm. The example given is that, even where an undertaking is on the verge of collapsing, the winding down of the business may take some time, and may be completed beyond the "near future".[104]

5. Remedies and the counterfactual

Where, after analysis, the competition authority finds that the merger, though it has an impact on the market, can be remedied, it might be willing to allow the merger, provided the set-out conditions for allowing such merger are complied with. The decision to allow a merger and to impose remedies rests on a firm theoretical construct; if the two firms merge and there is no entry, then a monopoly with two stores arises, whereas, if merging firms sell assets (stores) to a third firm, then duopoly competition is maintained.[105] This rationale highlights the importance of assessing the counterfactual to the remedy decision, *i.e.,* would entry occur in the absence of imposing (structural) remedies or not.

Art. 8 of the ECMR contains the Commission's powers in relation to the substantive assessment of qualifying concentration. It also contains the different decisions that could be made by the Commission with regards to the acceptability of the concentration.[106] In particular, art. 8(2) provides that the Commission may issue decisions declaring a concentration compatible with the common market where the parties have offered commitments or modifications to the merger that render it compatible with the common market. The remedies required may be either of or both divestiture and behavioural commitments[107] (though the remedies are often structural and not behavioural). This stems from the reasoning that remedies ought not be monitored once they are implemented. The General Court stated in *Gencor v Commission*[108] that structural remedies "prevent once and for all, or at least for some time, the emergence or strengthening of the dominant position previously identified by the Commission and do not, moreover, require medium or long-term

[102] Office of Fair Trading 2008:3.
[103] Bavosso & Lindsay 2007:191.
[104] Bavosso & Lindsay 2007:191.
[105] Duso *et al.* 2006.
[106] Furse 2007:157.
[107] Holmes & Turnbull 2002:499.
[108] *Gencor v Commission* T-102/96.

monitoring"; thus a behavioural remedy such as promise of future good conduct might not suffice.[109]

The Commission usually requires some form of divestiture.[110] A major condition of divestiture is that the divested aspect of a business must be viable and capable of competing effectively with the merged entity on a long-term basis. This requires that the divested part of the business is capable of operating viably on a stand-alone basis, at least regarding the merged entity, and must not be dependent on them for either supplies or for distribution outlets.[111] Another condition is that the divested business is to be transferred to a suitable purchaser within a specific deadline.[112]

The importance of the counterfactual, in this instance, is equally high. It generally affords the competition authority the avenue to reflect on the best possible remedy by assessing the impact of different remedies in closing the competitive deficit that would result from the merger. It could, for instance, help the authority ascertain the aspect of the business that is most suitable for divestiture. Its value can be illustrated by the case of *Nestle/Ralston Purina*,[113] where the Commission considered two alternative remedies: the first one was for Nestle to license its Friskies brand in Spain, and the second was for divestiture of 50 per cent shareholding of Ralston Purina in a Spanish JV. The Commission showed preference for the latter because it allowed for more competition on the market. In *Vodafone/Airtouch/ Mannesmann*,[114] the merging entities made a commitment to grant competitors access to roaming tariffs and wholesale services.

6. Counterfactual in ex-post-evaluation

As much as the importance of the counterfactual has been identified in the preceding section, the inconvenient truth is that counterfactuals are prone to errors and as such, if taken as the Holy Grail, the competition authority could end up seriously hampering competition through a string a type I and type II errors. It is thus prudent to realise the weakness of the counterfactual, which is simply that it is not the fact. Once we proceed on that account, the importance of an ex-postcounterfactual becomes evident – we can then review our choice of counterfactual by building a counterfactual that assesses the foregone counterfactuals. We can then compare the actual impact of the chosen counterfactual with the foregone counterfactuals, taking into account the facts that we now know.

It is imperative to summarise the possible problems with counterfactuals. First, it is difficult to assess the counterfactual, even where the issues appear to be straightforward. For example, in *Impala v Commission*, the Commission had built the counterfactual on the status quo that reflected that the market was not transparent enough to permit a collective dominant position to exist. The general court, however, faulted this basis by stating that there "were numerous sources of the transparency on the market".[115] The difficulty of choosing is linked to the problem of deciding the plausibility or implausibility of the counterfactual.[116] One of

[109] Furse 2007:161.
[110] Monti 2002.
[111] Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 2008:par. 22.
[112] Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004 2008:par. 23.
[113] *Nestle/Ralston Purina* No COMP/M.2337.
[114] *Vodafone/Airtouch/Mannesmann* No COMP/M.1795.
[115] *Impala v Commission* T-464/04.
[116] *Mastercard v OFT* [2006] CAT 14; *RCA/BHB v OFT* [2005] CAT 29; *contra National Grid v Ofgem* [2009] CAT 14.

the inherent problems with choosing is that the authority tends to place too much weight on the actual world. This might not be correct, as it might change as one moves from the actual to the counterfactual. Concerning the counterfactual based on the pre-merger world, this problem has been termed status quo bias or hyperterisis, while an ex-postcounterfactual could fall into the trap of 20/20 hindsight bias.[117] Problems could also arise in populating the chosen counterfactual, because it involves a degree of speculation and the likely problem of "a hypothesis upon a hypothesis".[118]

Because of these potential shortcomings, the counterfactual of an ex-post-evaluation is important for merger control assessment, because it helps the competition authority improve.[119] For instance, in the context of remedies, the counterfactual in ex-post-evaluation can help ascertain whether remedies are targeted at the *right* mergers. In other words, the counterfactual could respond to the question: "Did the commission make type I errors (impose remedies in pro-competitive mergers) and type II errors (not impose remedies in anticompetitive mergers) when compared to the counterfactual given by the market merger's assessment?"[120]

7. Conclusion

This paper sought to exhaustively analyse the importance of the counterfactual in merger control. It gave a holistic account of the role of the counterfactual right from the point of market definition up until the stage of ex-post-evaluation. Specifically, it explained the role of the counterfactual in ascertaining the substitutability of products through the use of the hypothetical monopolist test. The importance of the counterfactual in the assessment of market power was also analysed. I also assessed the importance of ascertaining the right basis for the counterfactual. This was followed by the summary of the importance and consequence of the counterfactual assessment. Counterfactuals also have an important role in efficiency analysis, failing firm defence and remedies.

However, it was also revealed that the counterfactual is not fail safe, as it has some drawbacks which stem from the fact that it is a projection that might not necessarily be correct. However, as long as competition authorities appreciate the potential problems that arise from the use of counterfactuals, they could turn it into an advantage during the ex-postreview of their merger decisions.

[117] Colley & Marsden 2010.
[118] Colley & Marsden 2010.
[119] The UK Competition Commission conducted a review of its decisions in 2009.
[120] Duso *et al.* 2006:24.

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